AMENDMENTS TO THE CLAIMS:

This listing of the pending claims will replace all prior versions and listings of claims in this application:

1. (Currently Amended) In a method for conducting a chemical reaction in the presence of a catalyst, the improvement comprising:

providing said catalyst on a support of electrically conductive carbonaceous material ~~that is electrically conductive, wherein said support is selected from the group consisting of conductive graphite, carbon nanotubes, activated carbon granules, and carbonaceous adsorbents~~; and

supplying an electric current to said ~~catalyst on said support such that said electric current resistively heats said catalyst, thereby increasing a temperature of said catalyst with respect to said support~~ support such that said support passes said electric current to said catalyst, wherein said electric current resistively heats said catalyst, thereby disproportionately increasing a temperature of said catalyst with respect to said support.

2. (Canceled).

3. (Previously Presented) The method of claim 1 wherein said support is doped with a metal oxide.

4. (Previously Presented) The method of claim 3 wherein said support is carbon fiber.

5. (Previously Presented) The method of claim 1 wherein said catalyst is selected from the group consisting of Pt, Pd, Ru, Ni, In, P, TiO_2, V_2O_5, MoO_2, WO_3, ZnO, SnO_2, CuO, Cu_2O, FeO, Fe_2O_3, and mixtures thereof.

6. (Previously Presented) The method of claim 5 wherein said catalyst is present in admixture with a carrier.

7. (Previously Presented) The method of claim 6 wherein said carrier is selected from the group consisting of graphite powder, graphite or activated carbon powder, Al_2O_3, SiO_2, TiO_2, MgO, ZrO_2 and mixtures thereof.

8. (Previously Presented) The method of claim 6 wherein said carrier is sintered and has pores from about 1 to about 100 Angstroms in diameter.

9. (Previously Presented) The method of claim 8 wherein said carrier has a surface area of about 1 to about 1000 m^2/g.

10. (Previously Presented) The method of claim 1 wherein said catalyst on said support is in the form of a particle and said chemical reaction is conducted in the presence of a bed of contacting particles.

11. (Previously Presented) The method of claim 10 wherein said bed of particles is captured between a pair of electrodes.

12. (Previously Presented) The method of claim 1 wherein said support is a conductive carbonaceous material having a pore diameter of about 0.005 to about 0.2 micrometers.

13. (Previously Presented) The method of claim 12 wherein said support possesses a heat conductivity of about 0.8 watt/cm-K to about 23 watt/cm-K.

14. (Previously Presented) The method of claim 13 wherein said support exhibits an electrical resistivity of about 1 to about 100 Ohms-cm.

15. (Previously Presented) The method of claim 14 wherein said support exhibits a dielectric constant of about 5 to 6 at about 10^3 Hertz.

16. (Previously Presented) The method of claim 1 wherein said catalyst is present on said support in an amount of about 1 $\mu g/cm^3$ to about 10 g/cm^3.

17. (Previously Presented) The method of claim 1 wherein said support is a woven or non-woven carbon fiber cloth or felt.

18. (Previously Presented) The method of claim 17 wherein said carbon fiber cloth or felt is folded or rolled and said reaction is carried out by passing chemical reactants between said folds or rolls in said cloth or felt.

19. (Previously Presented) The method of claim 1 wherein said support is a polymeric adsorbent.

20. (Previously Presented) The method of claim 19 wherein said polymeric adsorbent is an ion exchange resin.

21. (Previously Presented) The method of claim 20 wherein said ion exchange resin is a bead.

22. (Previously Presented) The method of claim 1 wherein said catalyst includes at least one of copper, zinc and aluminum.

23. (Previously Presented) The method of claim 1 wherein said electric current that is passed through said catalyst increases the temperature of said catalyst about 50 to about 1200 degrees C.

24. (Previously Presented) The method of claim 1 wherein said chemical reaction is a methanol steam reforming reaction.

25. (Previously Presented) The method of claim 1 wherein said support is a non-woven carbon fiber plug.

26. (Previously Presented) The method of claim 1 wherein a plurality of contacting non-woven carbon fiber plugs carrying said catalyst are interposed between a pair of electrodes.

27. (Canceled).

28. (Canceled).

29. (Currently Amended) A method for supporting a catalyst comprising:

providing an electrically conductive ~~support, wherein said support is selected from the group consisting of conductive graphite, carbon nanotubes, activated carbon granules, and carbonaceous adsorbents~~ carbonaceous material;

providing a catalyst;

dispersing said catalyst in or on said ~~support~~ electrically conductive carbonaceous material; and

supplying an electric current to said ~~support, wherein said support passes said current to said catalyst such that said catalyst is locally heated with respect to said support~~ electrically conductive carbonaceous material such that said electrically conductive carbonaceous material passes said electric current to said catalyst, wherein said electric current resistively heats said catalyst such that a temperature of said catalyst substantially increases with respect to said electrically conductive carbonaceous material.

30. (Currently Amended) A method for supplying energy to a catalyst comprising:

providing an electrically conductive support, wherein said support is selected from the group consisting of conductive graphite, carbon nanotubes, activated carbon granules, and carbonaceous adsorbents;

providing a catalyst;

dispersing said catalyst in or on said conductive support; and

~~providing energy to said conductive support, whereby said energy activates said catalyst at a local level~~ supplying an electric current to said support such that said support passes said

electric current to said catalyst, wherein said electric current resistively heats said catalyst such that a temperature of said catalyst substantially increases with respect to said support.

31. (Canceled).

32. (Previously Presented) In a method for conducting a chemical reaction in the presence of a catalyst, the improvement comprising:

providing said catalyst on a support that is electrically conductive; and

supplying an electric current to said support such that said support passes said electric current to said catalyst, wherein said electric current resistively heats said catalyst such that a temperature of said catalyst substantially increases with respect to said support.